REMARKS

The Office Action dated May 12, 2005, has been received and carefully considered. In this response, claims 1, 5, 12, 13, 21, 24-28, 43, 52, 59, 66, 75, and 83 have been amended. Entry of the amendments to claims 1, 5, 12, 13, 21, 24-28, 43, 52, 59, 66, 75, and 83 is respectfully requested. Reconsideration of the outstanding rejections in the present application is also respectfully requested based on the following remarks.

At the outset, Applicant notes with appreciation the indication on page 9 of the Office Action that claims 13 and 28-42 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. However, Applicant has opted to defer rewriting claims 13 and 28-42 in independent form pending reconsideration of the arguments presented below with respect to the rejected claims.

I. THE ANTICIPATION REJECTION OF CLAIMS 1-12, 14, 21-27, 83-88

On pages 2-6 of the Office Action, claims 1-12, 14, 21-27, and 83-88 were rejected under 35 U.S.C. § 102(b) as being anticipated by Bodai et al. (U.S. Patent No. 4,253,508). This rejection is hereby respectfully traversed with amendment.

Under 35 U.S.C. § 102, the Patent Office bears the burden of presenting at least a prima facie case of anticipation. In re Sun, 31 USPQ2d 1451, 1453 (Fed. Cir. 1993) (unpublished).

Anticipation requires that a prior art reference disclose, either expressly or under the principles of inherency, each and every element of the claimed invention. Id.. "In addition, the prior art reference must be enabling." Akzo N.V. v. U.S. International Trade Commission, 808 F.2d 1471, 1479, 1 USPQ2d 1241, 1245 (Fed. Cir. 1986), cert. denied, 482 U.S. 909 (1987). That is, the prior art reference must sufficiently describe the claimed invention so as to have placed the public in possession of it. In re Donohue, 766 F.2d 531, 533, 226 USPQ 619, 621 (Fed. Cir. 1985). "Such possession is effected if one of ordinary skill in the art could have combined the publication's description of the invention with his own knowledge to make the claimed invention." Id..

Regarding claim 1, the Examiner asserts that Bodai et al. teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator configured to communicate with an area containing a fluid having constituents, wherein the acoustic generator is operable to generate a frequency modulated acoustic field to enhance agglomeration of the constituents in the fluid.

However, it is respectfully submitted that Bodai et al. fails to disclose an acoustic agglomerator for agglomerating constituents comprising an acoustic generator configured to communicate with an area containing a fluid having constituents,

wherein the acoustic generator is operable to generate a frequency modulated acoustic field without reliance on the fluid, wherein the frequency modulated acoustic field is applied to the fluid to enhance agglomeration of the constituents in the fluid, as presently claimed. That is, Applicant respectfully submits that Bodai et al. does not disclose, or even suggest, generating a frequency modulated acoustic field without reliance on a fluid having constituents, wherein the frequency modulated acoustic field is applied to the fluid to enhance agglomeration of the constituents in the fluid. Thus, it is respectfully submitted that Bodai et al. does not disclose, or even suggest, the presently claimed invention. Accordingly, it is respectfully submitted that claim 1 should be allowable.

Claims 2-12 and 14 are dependent upon independent claim 1. Thus, since independent claim 1 should be allowable as discussed above, claims 2-14 and 14 should also be allowable at least by virtue of their dependency on independent claim 1. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 2-12 and 14 should be allowable.

Regarding claim 21, the Examiner asserts that Bodai et al. teaches an acoustic agglomerator for agglomerating constituents comprising an acoustic generator configured to communicate with

an area containing a gas having constituents, wherein the acoustic generator is operable to generate a modulated acoustic field to enhance agglomeration of the constituents in the gas.

However, it is respectfully submitted that Bodai et al. fails to disclose an acoustic agglomerator for agglomerating constituents comprising an acoustic generator configured to communicate with an area containing a gas having constituents, wherein the acoustic generator is operable to generate a modulated acoustic field without reliance on the gas, wherein the modulated acoustic field is applied to the gas to enhance agglomeration of the constituents in the gas, as presently claimed. That is, Applicant respectfully submits that Bodai et al. does not disclose, or even suggest, generating a modulated acoustic field without reliance on a gas having constituents, wherein the modulated acoustic field is applied to the gas to enhance agglomeration of the constituents in the gas. Thus, it is respectfully submitted that Bodai et al. does not disclose, or even suggest, the presently claimed invention. Accordingly, it is respectfully submitted that claim 21 should be allowable.

Claims 22-27 are dependent upon independent claim 21. Thus, since independent claim 21 should be allowable as discussed above, claims 22-27 should also be allowable at least by virtue of their dependency on independent claim 21. Moreover, these claims recite additional features which are not

claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 22-27 should be allowable.

Regarding claim 83, the Examiner asserts that Bodai et al. teaches a method of decreasing the frequency of cleaning a filtration device comprising: providing a filtration device, operable to filter a fluid stream having constituents; applying an acoustic field to the fluid stream at a point upstream of the filtration device, wherein the acoustic field enhances an agglomeration of the constituents.

However, it is respectfully submitted that Bodai et al. fails to disclose a method of decreasing the frequency of cleaning a filtration device comprising: providing a filtration device operable to filter a fluid stream having constituents; generating a modulated acoustic field without reliance on the fluid stream; applying the modulated acoustic field to the fluid stream at a point upstream of the filtration device, wherein the modulated acoustic field enhances an agglomeration of the constituents, as presently claimed. That is, Applicant respectfully submits that Bodai et al. does not disclose, or even suggest, generating a modulated acoustic field without reliance on a fluid stream having constituents, and applying the modulated acoustic field to the fluid stream at a point upstream of a filtration device, wherein the modulated acoustic field

enhances an agglomeration of the constituents. Thus, it is respectfully submitted that Bodai et al. does not disclose, or even suggest, the presently claimed invention. Accordingly, it is respectfully submitted that claim 83 should be allowable.

Claims 84-88 are dependent upon independent claim 83. Thus, since independent claim 83 should be allowable as discussed above, claims 84-88 should also be allowable at least by virtue of their dependency on independent claim 83. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 84-88 should be allowable.

In view of the foregoing, it is respectfully requested that the aforementioned anticipation rejection of claims 1-12, 14, 21-27, and 83-88 be withdrawn.

II. THE ANTICIPATION REJECTION OF CLAIMS 43-46, 50-52, & 56-62

On pages 4-5 of the Office Action, claims 43-46, 50-52, and 56-62 were rejected under 35 U.S.C. § 102(b) as being anticipated by Scott (U.S. Patent No. 3,771,286). This rejection is hereby respectfully traversed.

Regarding claim 43, the Examiner asserts that Scott teaches an acoustic agglomerator for agglomerating constituents comprising: an acoustic generator configured to communicate with

a fluid having constituents, wherein the fluid is in an open area, and the acoustic generator is operable to generate an acoustic field to enhance agglomeration of the constituents in the fluid in the open area.

However, it is respectfully submitted that Scott fails to disclose an acoustic agglomerator for agglomerating constituents comprising: an acoustic generator configured to communicate with a fluid having constituents, wherein the fluid is in an open area, wherein the acoustic generator is operable to generate a modulated acoustic field without reliance on the fluid, wherein the modulated acoustic field is applied to the fluid to enhance agglomeration of the constituents in the fluid in the open area, as presently claimed. That is, Applicant respectfully submits that Scott does not disclose, or even suggest, generating a modulated acoustic field without reliance on a fluid having constituents, wherein the modulated acoustic field is applied to the fluid to enhance an agglomeration of the constituents. Furthermore, Scott does not disclose an open area, but rather discloses a closed area defined by chamber 10. Thus, it is respectfully submitted that Scott does not disclose, or even suggest, the presently claimed invention. Accordingly, it is respectfully submitted that claim 43 should be allowable.

Claims 44-46, 50, and 51 are dependent upon independent claim 43. Thus, since independent claim 43 should be allowable

as discussed above, claims 44-46, 50, and 51 should also be allowable at least by virtue of their dependency on independent claim 43. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 44-46, 50, and 51 should be allowable.

Regarding claim 52, the Examiner asserts that Scott teaches an acoustic agglomerator for agglomerating constituents comprising: an acoustic generator configured to communicate with an exhaust of a vehicle having constituents, wherein the acoustic generator is operable to generate an acoustic field to enhance agglomeration of the constituents in the exhaust.

However, it is respectfully submitted that Scott fails to disclose an acoustic agglomerator for agglomerating constituents comprising: an acoustic generator configured to communicate with an exhaust of a vehicle having constituents, wherein the acoustic generator is operable to generate a modulated acoustic field without reliance on the exhaust, wherein the modulated acoustic field is applied to the exhaust to enhance agglomeration of the constituents in the exhaust, as presently claimed. That is, Applicant respectfully submits that Scott does not disclose, or even suggest, generating a modulated acoustic field without reliance on a vehicle exhaust having

constituents, wherein the modulated acoustic field is applied to the exhaust to enhance an agglomeration of the constituents in the exhaust. Furthermore, Scott does not disclose vehicle exhaust, but rather merely briefly mentions transportation systems. Thus, it is respectfully submitted that Scott does not disclose, or even suggest, the presently claimed invention. Accordingly, it is respectfully submitted that claim 52 should be allowable.

Claims 56-58 are dependent upon independent claim 52. Thus, since independent claim 52 should be allowable as discussed above, claims 56-58 should also be allowable at least by virtue of their dependency on independent claim 52. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 56-58 should be allowable.

Regarding claim 59, the Examiner asserts that Scott teaches an acoustic agglomerator for agglomerating constituents comprising: an acoustic generator configured to communicate with an area with a fluid flow having constituents, wherein the acoustic generator is operable to generate an acoustic field to enhance agglomeration of the constituents in the area, and the acoustic generator applies the acoustic field to the area at an angle arbitrary to a direction of the fluid flow.

However, it is respectfully submitted that Scott fails to disclose an acoustic agglomerator for agglomerating constituents comprising: an acoustic generator configured to communicate with an area with a fluid flow having constituents, wherein the acoustic generator is operable to generate a modulated acoustic field without reliance on the fluid flow, wherein the modulated acoustic field is applied to the fluid flow to enhance agglomeration of the constituents in the area, and the acoustic generator applies the modulated acoustic field to the area at an angle arbitrary to a direction of the fluid flow, as presently claimed. That is, Applicant respectfully submits that Scott does not disclose, or even suggest, generating a modulated acoustic field without reliance on a fluid flow having constituents, wherein the modulated acoustic field is applied to the fluid flow at an angle arbitrary to a direction of the fluid flow to enhance an agglomeration of the constituents. Thus, it is respectfully submitted that Scott does not disclose, or even suggest, the presently claimed invention. Accordingly, it is respectfully submitted that claim 59 should be allowable.

Claims 60-62 are dependent upon independent claim 59. Thus, since independent claim 59 should be allowable as discussed above, claims 60-62 should also be allowable at least by virtue of their dependency on independent claim 59. Moreover, these claims recite additional features which are not

claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 60-62 should be allowable.

In view of the foregoing, it is respectfully requested that the aforementioned anticipation rejection of claims 43-46, 50-52, and 56-62 be withdrawn.

III. THE ANTICIPATION REJECTION OF CLAIMS 66-69, 82, 83, 87 & 88

On pages 5-6 of the Office Action, claims 66-69, 82, 83, 87, and 88 were rejected under 35 U.S.C. § 102(b) as being anticipated by Dudgeon et al. (U.S. Patent No. 4,307,964). This rejection is hereby respectfully traversed.

Regarding claim 66, the Examiner asserts that Dudgeon et al. teaches an acoustic agglomerator for agglomerating constituents comprising: an acoustic generator configured to communicate with an area containing a fluid with constituents, wherein the acoustic generator is operable to generate an acoustic field to enhance agglomeration of the constituents in the area; and a system operable to determine information about the constituents in the area, wherein the acoustic generator can modify the acoustic field in response to the information.

However, it is respectfully submitted that Dudgeon et al. fails to disclose an acoustic agglomerator for agglomerating constituents comprising: an acoustic generator configured to

communicate with an area containing a fluid with constituents, wherein the acoustic generator is operable to generate a modulated acoustic field without reliance on the fluid, wherein the modulated acoustic field is applied to the fluid to enhance agglomeration of the constituents in the area; and a system operable to determine information about the constituents in the area, wherein the acoustic generator can modify the modulated acoustic field in response to the information, as presently claimed. That is, Applicant respectfully submits that Dudgeon et al. does not disclose, or even suggest, generating a modulated acoustic field without reliance on a fluid having constituents, wherein the modulated acoustic field is applied to the fluid to enhance an agglomeration of the constituents. Thus, it is respectfully submitted that Scott does not disclose, or even suggest, the presently claimed invention. Accordingly, it is respectfully submitted that claim 66 should be allowable.

Claims 67-69 and 82 are dependent upon independent claim 66. Thus, since independent claim 66 should be allowable as discussed above, claims 67-69 and 82 should also be allowable at least by virtue of their dependency on independent claim 66. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is

respectfully submitted that claims 67-69 and 82 should be allowable.

Regarding claim 83, the Examiner asserts that Dudgeon et al. teaches a method of decreasing the frequency of cleaning a filtration device comprising: providing a filtration device, operable to filter a fluid stream having constituents; applying an acoustic field to the fluid stream at a point upstream of the filtration device, wherein the acoustic field enhances an agglomeration of the constituents.

However, it is respectfully submitted that Dudgeon et al. fails to disclose a method of decreasing the frequency of cleaning a filtration device comprising: providing a filtration device operable to filter a fluid stream having constituents; generating a modulated acoustic field without reliance on the fluid stream; applying the modulated acoustic field to the fluid stream at a point upstream of the filtration device, wherein the modulated acoustic field enhances an agglomeration of the constituents, as presently claimed. That is, Applicant respectfully submits that Dudgeon et al. does not disclose, or even suggest, generating a modulated acoustic field without reliance on a fluid stream having constituents, and applying the modulated acoustic field to the fluid stream at a point upstream of a filtration device, wherein the modulated acoustic field enhances an agglomeration of the constituents. Thus, it is

respectfully submitted that Dudgeon et al. does not disclose, or even suggest, the presently claimed invention. Accordingly, it is respectfully submitted that claim 83 should be allowable.

Claims 87 and 88 are dependent upon independent claim 83. Thus, since independent claim 83 should be allowable as discussed above, claims 87 and 88 should also be allowable at least by virtue of their dependency on independent claim 83. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 87 and 88 should be allowable.

In view of the foregoing, it is respectfully requested that the aforementioned anticipation rejection of claims 66-69, 82, 83, 87, and 88 be withdrawn.

IV. THE OBVIOUSNESS REJECTION OF CLAIMS 47-49, 53-55, AND 63-65

On pages 6-7 of the Office Action, claims 47-49, 53-55, and 63-65 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Scott (U.S. Patent No. 3,771,286) in view of Bodai et al. (U.S. Patent No. 4,253,508). This rejection is hereby respectfully traversed.

As stated in MPEP § 2143, to establish a prima facie case of obviousness, three basic criteria must be met. First, there

must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Also, as stated in MPEP § 2143.01, obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988); In re Jones, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990). Further, as stated in MPEP § 2143.03, to establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re

Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). That is, "[a]ll words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970). Additionally, as stated in MPEP § 2141.02, a prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc., 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). Finally, if an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Claims 47-49 are dependent upon independent claim 43. Thus, since independent claim 43 should be allowable, as discussed above, claims 47-49 should also be allowable at least by virtue of their dependency on independent claim 43. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 47-49 should be allowable.

Claims 53-55 are dependent upon independent claim 52. Thus, since independent claim 52 should be allowable, as discussed above, claims 53-55 should also be allowable at least by virtue of their dependency on independent claim 52.

Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 53-55 should be allowable.

Claims 63-65 are dependent upon independent claim 59. Thus, since independent claim 59 should be allowable, as discussed above, claims 63-65 should also be allowable at least by virtue of their dependency on independent claim 59. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 63-65 should be allowable.

In view of the foregoing, it is respectfully requested that the aforementioned obviousness rejection of claims 47-49, 53-55, and 63-65 be withdrawn.

V. THE OBVIOUSNESS REJECTION OF CLAIMS 1, 3, 4, 14-20, & 70-81

On pages 7-8 of the Office Action, claims 1, 3, 4, 14-20, and 70-81 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Dudgeon et al. (U.S. Patent No. 4,307,964) in view of Bodai et al. (U.S. Patent No. 4,253,508). This rejection is hereby respectfully traversed.

Regarding claim 1, the Examiner asserts that the combination of Dudgeon et al. and Bodai et al. teaches an

acoustic agglomerator for agglomerating constituents comprising an acoustic generator configured to communicate with an area containing a fluid having constituents, wherein the acoustic generator is operable to generate a frequency modulated acoustic field to enhance agglomeration of the constituents in the fluid.

However, it is respectfully submitted that the combination of Dudgeon et al. and Bodai et al. fails to disclose an acoustic agglomerator for agglomerating constituents comprising an acoustic generator configured to communicate with an area containing a fluid having constituents, wherein the acoustic generator is operable to generate a frequency modulated acoustic field without reliance on the fluid, wherein the frequency modulated acoustic field is applied to the fluid to enhance agglomeration of the constituents in the fluid, as presently claimed. That is, Applicant respectfully submits that Dudgeon et al. and Bodai et al., either alone or in combination, disclose, or even suggest, generating a frequency modulated acoustic field without reliance on a fluid having constituents, wherein the frequency modulated acoustic field is applied to the fluid to enhance agglomeration of the constituents in the fluid. Thus, it is respectfully submitted that the combination of Dudgeon et al. and Bodai et al. does not disclose, or even suggest, the presently claimed invention. Accordingly, it is respectfully submitted that claim 1 should be allowable.

Claims 3, 4, and 14-20 are dependent upon independent claim 1. Thus, since independent claim 1 should be allowable as discussed above, claims 3, 4, and 14-20 should also be allowable at least by virtue of their dependency on independent claim 1. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 3, 4, and 14-20 should be allowable.

Claims 70-81 are dependent upon independent claim 66. Thus, since independent claim 66 should be allowable, as discussed above, claims 70-81 should also be allowable at least by virtue of their dependency on independent claim 66. Moreover, these claims recite additional features which are not claimed, disclosed, or even suggested by the cited references taken either alone or in combination. Accordingly, it is respectfully submitted that claims 70-81 should be allowable.

In view of the foregoing, it is respectfully requested that the aforementioned obviousness rejection of claims 1, 3, 4, 14-20, and 70-81 be withdrawn.

VI. CONCLUSION

In view of the foregoing, it is respectfully submitted that the present application is in condition for allowance, and an

early indication of the same is courteously solicited. The Examiner is respectfully requested to contact the undersigned by telephone at the below listed telephone number, in order to expedite resolution of any issues and to expedite passage of the present application to issue, if any comments, questions, or suggestions arise in connection with the present application.

To the extent necessary, a petition for an extension of time under 37 CFR § 1.136 is hereby made.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-0206, and please credit any excess fees to the same deposit account.

Respectfully submitted,

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